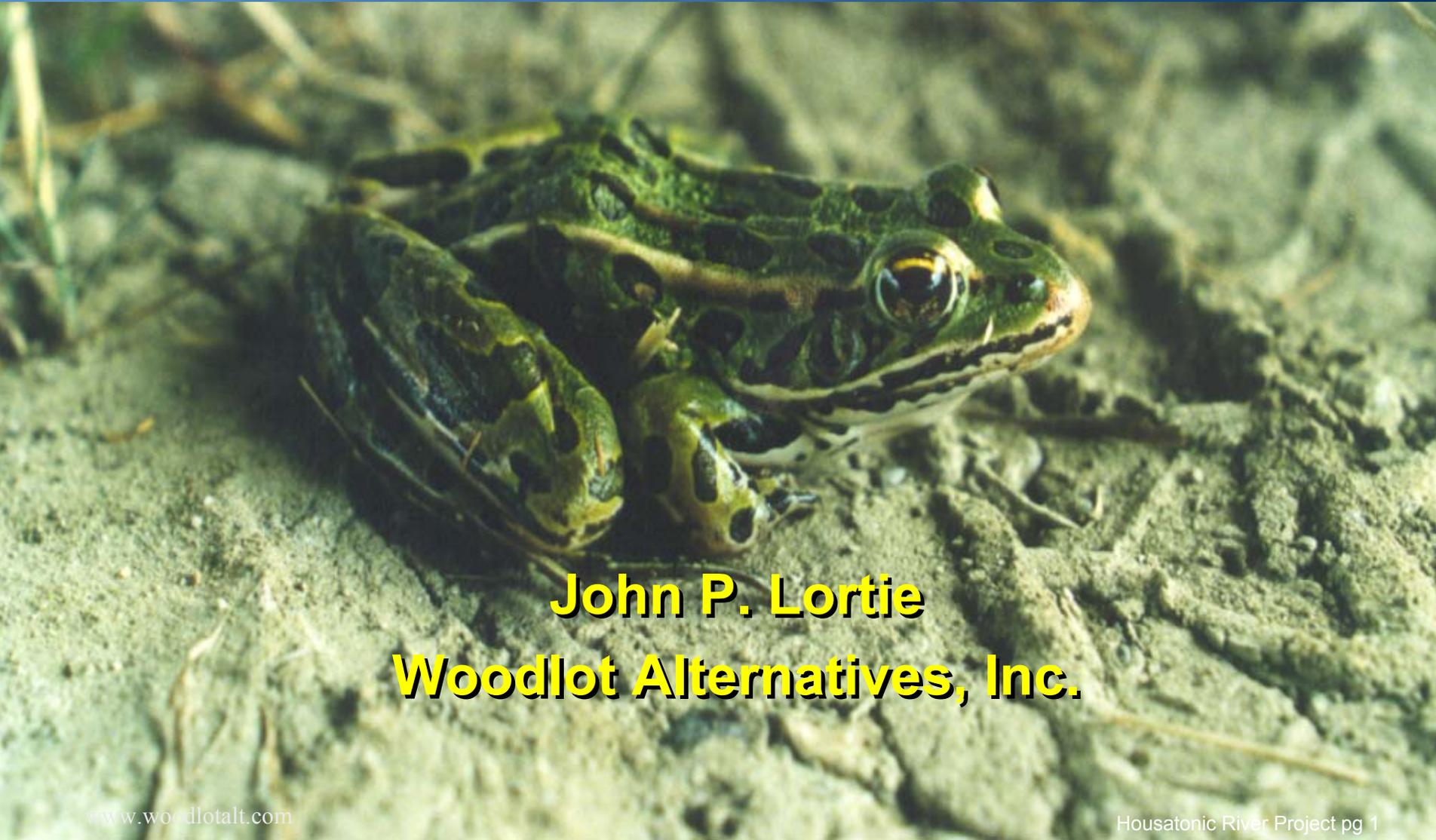




Ecological Characterization Housatonic River 1998 – 2002



John P. Lortie
Woodlot Alternatives, Inc.



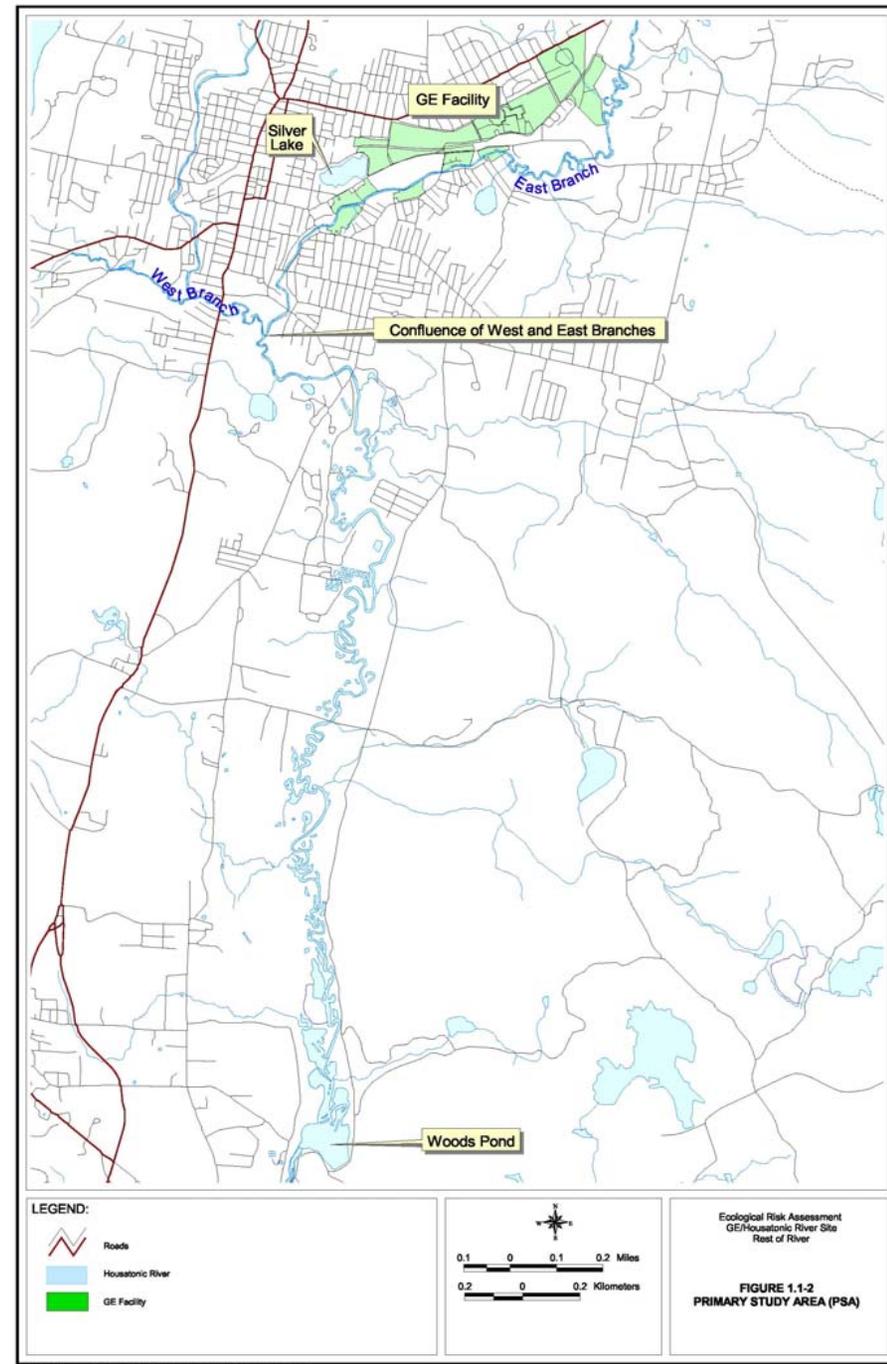
Ecological Characterization

- **Overview**
 - Foundation of ERA
- **Field Studies**
 - Multiple studies over a 5 year period
 - Many animals studied
- **Findings**
 - Presented in same order as in ERA



Ecological Characterization

- Primary Study Area (PSA)
- Reference Areas
 - Hinsdale Flats SWMA
 - October Mountain State Forest
 - Ashley Lake
 - Threemile Pond SWMA



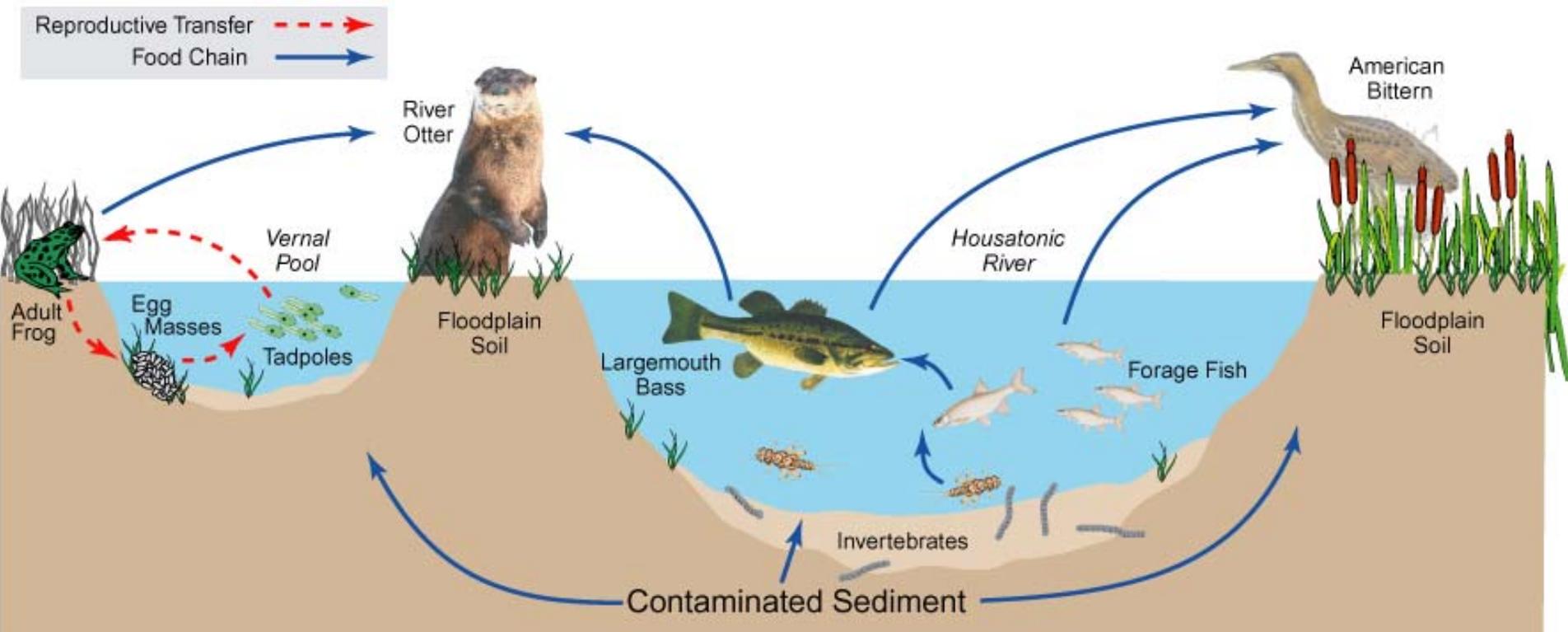


Ecological Characterization

- identify the type and spatial distribution of natural communities
- identify the plants & animals in each community (Species:Habitat Associations)
- describe interrelationships between plants and animals



Objectives – Food Chain





Field Studies Rare Plants & Natural Communities

- **13 rare plants species found**
 - 2 endangered
 - 4 threatened
 - 4 special concern
 - 3 watch list
- **2 rare natural communities found**
 - bur oak forest
 - circumneutral floodplain forest



Field Studies Invertebrates

- **Freshwater Mussels**
- **Dragonflies**
- **Vernal Pool Insects**
- **Terrestrial Insects**
 - Earthworms
 - Leaf litter insects (worms, slugs, beetles)



Field Studies Dragonflies

- 38 dragonfly species observed in Primary Study Area
 - zebra clubtail (E)
 - arrow clubtail (T)
 - riffle snaketail (T)



Field Studies Freshwater Mussels

- Three Species Observed in Study Area
 - Eastern Elliptio (*Elliptio complanata*)
 - Eastern Floater (*Pyganodon cataracta*)
 - Triangle Floater (*Alasmidonta undulata*)
 - Triangle Floater is Special Concern



Field Studies Reptiles and Amphibians

- **Species:Habitat Associations**
- **Visual & Acoustic Field Studies**
- **Breeding Pool (vernal and permanent) Field Studies**



Field Studies Fish

- **New Data**
 - Fish tissue collection 1998 (HHRA & ERA)
 - Fish habitat characterization
 - Fish biomass estimation
 - Mink study food collection
- **Historical Data Review**
 - Young of Year GE surveys
 - USGS data
 - CT data



Field Studies Fish

- 25 species of fish observed in PSA
- 41 species total in Housatonic River in MA/CT



Field Studies Birds

- **Species:Habitat Associations**
- **Waterfowl Studies**
- **Wading and Marshbird Playback Call Surveys**
- **Hawk & Owl Playback Call Surveys**
- **Forest Bird Surveys**



Field Studies

Birds

- **Wading Birds – 5 species observed in breeding season**
 - Virginia & sora rails, green-backed heron, great blue heron, common moorhen observed in breeding season
- **Forest Birds – 47 species identified as likely nesters**
- **Waterfowl – 3 species observed breeding**
 - mallards, wood ducks, Canada Geese (nest in PSA)
- **Kingfisher – multiple nesting pairs**



Field Studies Birds

- **Hawks and Owls – 14 species observed**
 - northern harrier
 - sharp-shinned hawk
 - cooper's hawk
 - goshawk
 - red-shouldered hawk
 - bald eagle (attempted nest)
 - broad-winged hawk
 - red-tailed hawk
 - kestrel (1 nest)
 - great horned owl
 - barred owl
 - northern saw-whet owl
 - turkey vulture
 - osprey (territorial – no nesting)



Field Studies Mammals

- **Species:Habitat Association**
- **Mink & Otter Studies**
 - **Snow Tracking**
 - **Scent Posts**
 - **Otter Scat Analysis**
- **Small Mammal Study**
 - **Catch per unit effort**
 - **Species diversity**
- **Bat surveys – Anabat detection system**

Beaver
track





Ecological Characterization

- **ERA Representative Species**

- American Bittern
- Great Blue Heron
- Common Moorhen
- American Robin
- Tree Swallow
- Belted Kingfisher
- Bald Eagle
- Osprey
- Brown Bullhead
- Largemouth Bass
- Wood Frog
- Leopard Frog
- Water Shrew
- Short-tailed Shrew
- Mink
- Otter
- Red Fox



Ecological Characterization - Animal Profiles

- Description, Body Size
- Distribution, Migration
- Habitat
- Hibernation, Home Range and Territoriality
- Breeding, Growth and Development
- Diet, Energetics and Metabolism
- Populations and Demography

Species Profile: Largemouth Bass

Largemouth Bass

Micropterus salmoides

DESCRIPTION

The largemouth bass is one of the most important freshwater game fishes in the United States. It is considered a warm water fish, and is the largest member of the sunfish family (Centrarchidae). The largemouth is able to thrive in a wide range of freshwater habitats, however, it thrives best in shallow, weedy lakes, sluggish rivers or backwaters. Both the largemouth and smallmouth bass are similar in appearance. The largemouth can be distinguished by its longer upper jaw which, when the mouth is closed, extends well beyond the eye. The body is oblong and somewhat compressed. It is dark green above, shading to lighter silvery-green on the sides, and whitish below (Scarola 1987). A solid, dark horizontal stripe extending from the head to the tail further distinguishes it from the smallmouth bass.

BODY SIZE

Largemouth bass average 10-20 inches in length. A typical adult is 1-2 pounds, but 5-13 pounds is not uncommon (Cochran 1960). Mature females grow larger than males, growing up to 10 pounds;

1800s (McClane 1978). Largemouth bass were first introduced into Massachusetts prior to 1862 (Hartel et al. 1996). As a widely introduced fish that adapts well to warm waters, it has become a highly-valued game fish now found throughout the United States.



Figure 1. Indigenous range of largemouth bass in North America



Ecological Characterization

- **GIS habitat type maps**
 - Wetlands types and boundaries
 - Rare plants and natural communities
 - Sample locations
 - Topography
 - Ownership



Ecological Characterization

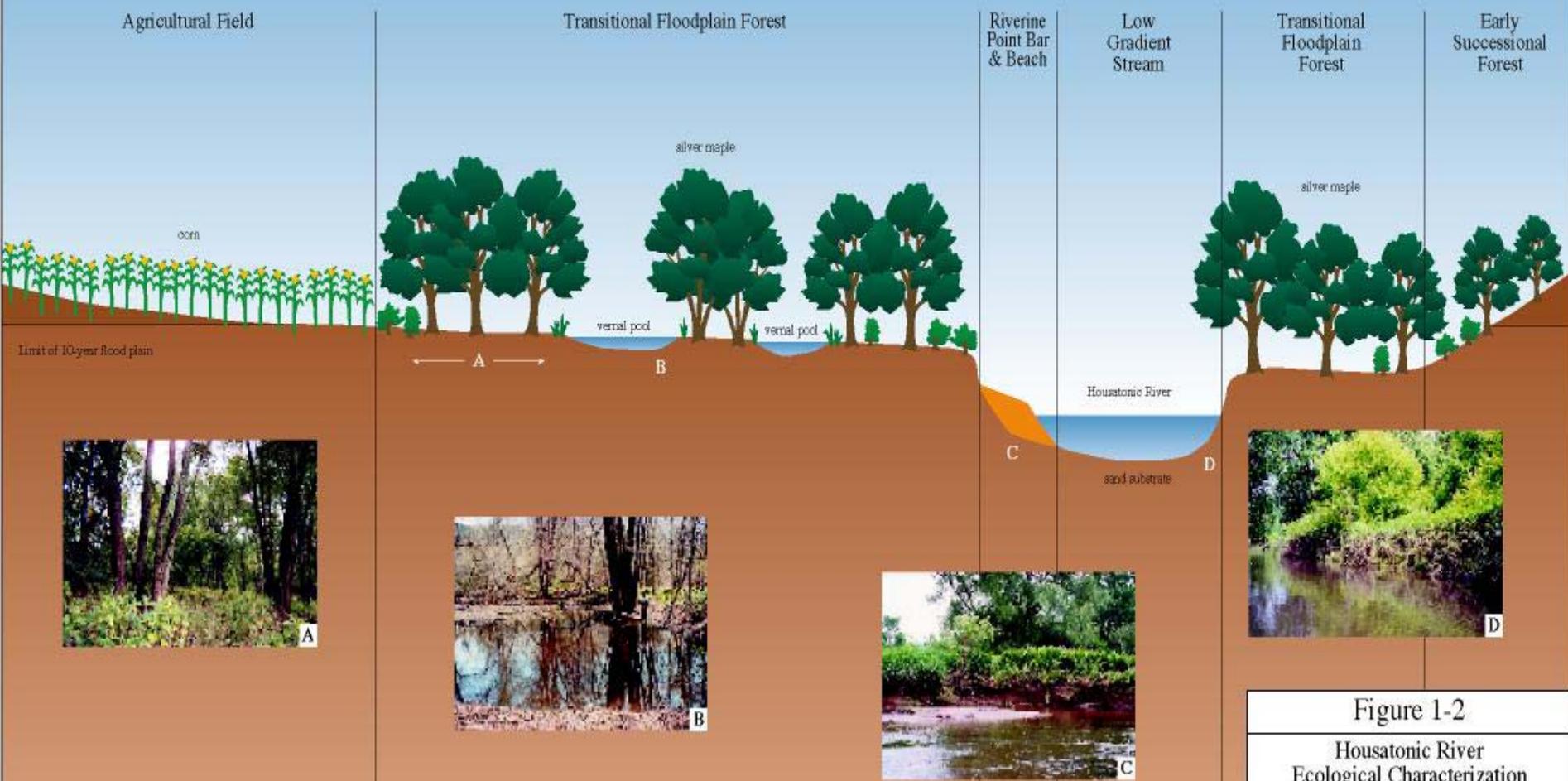


Figure 1-2

Housatonic River Ecological Characterization

Representative Section of Primary Study Area
Middle Section
(Reach 5a near Pittsfield Waste Water Treatment Plant)